The opinion in support of the decision being entered today is *not* binding precedent of the Board.

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte JONNE SOININEN, JAAKKO RAJANIEMI,
and AHTI MUHONEN

Appeal 2007-1964
Application 09/940,577
Technology Center 2100

Decided: September 26, 2007

Before LEE E. BARRETT, ROBERT E. NAPPI, and JOHN A. JEFFERY, *Administrative Patent Judges.*

JEFFERY, *Administrative Patent Judge.*

DECISION ON APPEAL

Appellants appeal under 35 U.S.C. § 134 from the Examiner's rejection of claims 1-4, 10, 21, 22, and 35 which are all claims pending in this application (Br. 3). We have jurisdiction under 35 U.S.C. § 6(b). We reverse.

STATEMENT OF THE CASE

Appellants invented an access network for a mobile communications network that supports a mobile IP protocol. Specifically, an access node is arranged to check for a preferred mobility agent that should be used. If a more preferred mobility agent is available which is not the same as the current one, the connection to the current mobility agent is closed and a new connection to the preferred mobility agent is opened. Also, agent advertisement messages sent by the new mobility agent can be received by the mobile node so that the mobile node can detect the change of attachment point.[1] Claim 1 is illustrative:

1. A method of providing macro mobility management for a mobile node in an access system comprising a plurality of mobile nodes, a first and a second access node serving said mobile nodes within first and second parts of the access system, respectively, at least one first gateway node for interfacing said first part of the access system with external networks, and a first mobility entity which is associated with said at least one first gateway node and arranged to provide macro mobility management routing services to the mobile nodes while registered to the first part of the access system, said method comprising:

establishing a session between one of said plurality of mobile nodes and a second party via said first access node and said first mobility entity;

checking whether there is at least one second mobility entity to which the first access node can establish a connection as an alternative for the first mobility entity and which is more preferred for the first access node in respect of routing than said first mobility entity; and

reacting to said checking by

[1] *See generally* Abstract, ¶¶ 0019-20.

A) maintaining a connection from said first access node to said first mobility entity if there is no second mobility entity which is more preferred than said first one, and

B) opening new connection from said first access node to said second mobility entity if said more preferred second mobility entity is available, and initiating macro mobility management registration.

The Examiner relies on the following prior art reference to show unpatentability:

Leung	US 6,195,705 B1	Feb. 27, 2001 (filed Jun. 30, 1998)

Claims 1-4, 10, 21, 22, and 35 stand rejected under 35 U.S.C. § 102(e) as being anticipated by Leung.

Rather than repeat the arguments of Appellants or the Examiner, we refer to the Briefs and the Answer[2] for their respective details. In this decision, we have considered only those arguments actually made by Appellants. Arguments which Appellants could have made but did not make in the Briefs have not been considered and are deemed to be waived. *See* 37 C.F.R. § 41.37(c)(1)(vii).

OPINION

Anticipation is established only when a single prior art reference discloses, expressly or under the principles of inherency, each and every element of a claimed invention as well as disclosing structure which is capable of performing the recited functional limitations. *RCA Corp. v. Applied Digital Data Systems, Inc.*, 730 F.2d 1440, 1444, 221 USPQ 385,

[2] We refer to the most recent Examiner's Answer mailed Nov. 3, 2006.

388 (Fed. Cir. 1984); *W.L. Gore and Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 1554, 220 USPQ 303, 313 (Fed. Cir. 1983).

Claims 1-4 and 10

The Examiner has indicated how the claimed invention is deemed to be fully met by the disclosure of Leung (Answer 3-5). Regarding independent claim 1, Appellants argue that Leung does not disclose an access system as claimed. According to Appellants, mobile nodes 6, 27 are always associated with their corresponding "home agent" (HA) regardless of their physical location (e.g., in groups 214, 216). Appellants add that HA1 206 and HA2 204 do not correspond to different access nodes of an access system, but rather are merely mobile IP entities attached to the same network section (i.e., groups 214, 216 collectively form one access port). As such, Appellants contend, the HAs cannot correspond to different access nodes of an access system (Br. 10).

Appellants further contend that the virtual HA (HAV1 202) and HA1 do not correspond to two different entities, namely a first mobility entity and a first access node respectively. Appellants argue that since HAV1 is not a physical router, but a façade adopted by one of the active HAs in the groups (i.e., either HA1 or its backup HA2), the HAs *collectively* assume the role of HAV1 (Br. 10-11) (emphasis in original).

In addition, Appellants argue that Leung's system does not establish a session between one of the multiple nodes and a second party via the first access node and the first mobility entity as claimed. According to Appellants, Leung merely transfers packets between two mobile IP network entities (HA1 and Foreign Agent (FA) 10), *not* between a mobile node and a

second party (Br. 12; Reply Br. 3). Appellants further argue that communications in Leung between the FA 10 and HA1 occurs only when the mobile node 6 is attached to the network section 14. These communications, Appellants contend, do not provide a session between the mobile node 6 and the FA 10 ("second party") via HA1 ("first access node") and HAV1 ("first mobility entity"). Appellants add that since HAV1 resides within HA1, it is not a separate network entity from HA1 (Br. 12-13).

Appellants also contend that Leung does not check whether there is at least one second mobility entity to which the first access node can establish a connection as an alternative to the first mobility entity and which is more preferred for the first access node in respect of routing than the first mobility entity as claimed. Specifically, Appellants argue that Leung simply does not provide an *alternative connection* between HA1 and HAV2 in the event this connection is more preferred than the connection between HA1 and HAV1. Appellants emphasize that HA1 and HA2 merely *emulate* HAV1 and HAV2 respectively; there is no *connection* between the respective HAs and virtual HAs (Br. 14).

Appellants add that Leung's backup operation does not provide such a claimed "alternative" connection. According to Appellants, when a particular HA fails (either HA1 or HA2), the functioning HA will emulate the virtual HA (HAV) of the failed HA (i.e., the HAV in the failed HA's group), but will also maintain its role in servicing its own group. That is, the functioning HA will continue to emulate the virtual HA in its own group. According to Appellants, such added emulation by a functioning HA in the event of another HA's failure is simply not an alternative to emulating its own virtual HA (Br. 14).

Lastly, Appellants argue that Leung does not disclose reacting to the checking step by (1) maintaining a connection from the first access node to the first mobility entity if there is not a second, more preferred mobility entity, and (2) opening a new connection from the first access node to this second, preferred mobility entity if it is available, and initiating macro mobility management registration as claimed. Appellants contend that Leung instead teaches that HA1 must emulate HAV2 (identified as the "second mobility entity") when HA2 fails (Br. 15).

The Examiner notes that Leung establishes a session between (1) one of multiple mobile nodes (i.e., mobile node 6), and (2) a "second party" (e.g., PC 16, FA 10, or corresponding node 18). Such communication, according to the Examiner, is via the "first access node" (HA1) and the "first mobility entity" (HAV1). The Examiner further contends that since HA2 and HAV2 function as standby agents in the event HA1 and HAV1 fails, HAV2 therefore functions as a "second mobility entity" acting as an alternative for the first mobility entity (HAV1) to the first access node (HA1). The Examiner concludes that Leung therefore teaches checking whether there is such an alternative (a second mobility entity) to which the first access node can establish a connection -- an alternative which is more preferred for the first access node in respect of routing than the first mobility entity (Answer 9-10).

We will not sustain the Examiner's rejection of independent claim 1. At the outset, we agree with the Examiner that Leung establishes a session between mobile node 6 and a "second party," a "party" which can reasonably include a remote entity on an external network. We also agree

with the Examiner that HA1 reasonably corresponds to a "first access node," and HAV1 reasonably corresponds to a "first mobility entity."

Although the virtual HAs (HAV1 and HAV2) are not physical routers, but façades adopted by a respective active HA (Leung, col. 7, ll. 43-49), these virtual HAs nonetheless at least implicitly require a "connection" to their adopting HA for such emulation functionality to be realized. At a minimum, such a "connection" is readily ascertained by noting the lines that directly connect the boxes representing HAV1, HA1, HA2, and HAV2 as illustrated in Figure 2B. Therefore, given this "connection" -- albeit via emulation -- we find Leung reasonably establishes a session via both (1) HA1 (the "first access node"), and (2) HAV1 (the "first mobility entity").

Referring to Figure 2B of Leung, groups 214 and 216 comprise active HAs 206 and 208 respectively. These active HAs, in turn, emulate their respective virtual HAs (i.e., HAV1 and HAV2). The HAs also have a significant backup function: if an HA should fail, the other HA will automatically assume the role of active HA for the failed HA and its corresponding emulation functions. However, this backup HA will also continue to service its original group (and associated emulation). For example, if HA2 fails, HA1 will not only continue to service its own group 214 (with HAV1 emulation) as it did prior to failure, but also assume HA2's role in servicing group 216 (with HAV2 emulation). In this backup condition, HA1 emulates both HAV1 and HAV2. Commensurate backup functions exist in the event HA1 fails instead of HA2 (Leung, col. 8, ll. 44-67).

Although we find this backup condition in Leung effectively constitutes an alternative mobility entity connection with respect to an

access node,[3] we do not find that the system *checks* whether there is at least one second mobility entity to which the first access node can establish a connection as a more preferred alternative for the first mobility entity as claimed. Leung's HA backup functionality and the backup HA's concomitant emulation of the HAV corresponding to the failed HA is *determined merely by the operative state of the HAs*: the system simply does not affirmatively *check* for the preferred alternative mobility entity as claimed.

In sum, Leung's system normally maintains a connection from the first access node HA1 to the first mobility entity HAV1 -- a normal condition that would not include a second mobility entity that is more preferred that the first one (i.e., with respect to *mobile node 27* upon failure of HA2). In addition to this connection, upon failure of HA2, a new connection is opened from the first access node HA1 to an available second mobility entity HAV2. And, as we indicated previously, at least from the perspective of mobile node 27, this second mobility entity connection would be preferred when HA2 fails.

Nevertheless, Leung fails to disclose *checking* for such a preferred alternative as claimed. For this reason alone, we find Leung fails to meet all

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[3] For example, with respect to the operation of HA1, two distinct alternatives exist: (1) HA1 emulates HAV1 (one mobility entity connection under normal operation), and (2) HA1 emulates both HAV1 and HAV2 (failure of HA2 results in two mobility entity connections).

In our view, upon failure of HA2, the alternative which connects the first access node HA1 to the second mobility entity HAV2 would certainly be preferred over the first alternative (no second mobility entity emulation at all) *at least with respect to mobile node 27.* Indeed, without such an alternative, mobile node 27 could not communicate effectively.

limitations of independent claim 1. Accordingly, we will not sustain the Examiner's rejection of claim 1 or claims 2-4 dependent thereon for similar reasons. Moreover, since independent claim 10 recites similar limitations, we will not sustain the Examiner's rejection of that claim for similar reasons.

Claims 21 and 22

Independent claim 21 recites limitations commensurate with the checking limitation noted above with respect to independent claim 1. Therefore, we will not sustain the Examiner's rejection of independent claim 21 and dependent claim 22 for similar reasons as indicated with respect to claim 1.

In addition, independent claim 21 calls for, in pertinent part, (1) at least two gateway nodes for interfacing the access system with external networks, and (2) at least two mobility entities which are associated with *different ones* of the at least two gateway nodes (emphasis added). While Leung does teach connecting an HA to the internet via multiple routers (i.e., gateway nodes) R1 and R3 as the Examiner indicates (Leung, col. 1, ll. 59-63; Figure 1A), the reference still does not teach associating the mobility entities (HAV1 and HAV2) with *different* gateway nodes as claimed. As shown in Figure 2B, both HA1 and HA2 (and their associated mobility entities HAV1 and HAV2) are associated with the *same* gateway node R1 (and therefore the same gateway nodes R1 and R3 as shown in Figure 1A).

For at least this additional reason, we will not sustain the Examiner's rejection of independent claim 21 or claim 22 dependent thereon.

Independent Claim 35

Independent claim 35 also recites limitations commensurate with the checking limitation noted above with respect to independent claim 1. We will therefore not sustain the Examiner's rejection of independent claim 35 for similar reasons as indicated in connection with claim 1.

In addition, independent claim 35 calls for, in pertinent part, (1) at least two gateway nodes for interfacing the packet radio access system with external networks, and (2) at least two foreign agents which are associated with different ones of the at least two gateway nodes.

Leung indicates that the disclosed aspects pertaining to HAs apply to FAs as well (Leung, col. 6, ll. 42-47; col. 8, ll. 36-43; col. 23, ll. 48-53). Our discussion with respect to claims 21 and 22 (pertaining to HAs) therefore applies equally here. Apart from reiterating the same position advanced with respect to claims 1 and 21, the Examiner has pointed to nothing in Leung that expressly discloses that FAs are necessarily associated with different gateway nodes as claimed.

For at least this additional reason, we will not sustain the Examiner's rejection of independent claim 35.

DECISION

We have not sustained the Examiner's rejection with respect to any claims on appeal. Therefore, the Examiner's decision rejecting claims 1-4, 10, 21, 22, and 35 is reversed.

REVERSED

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